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What is claimed is:

1. A temperature sensing device comprising:
a pair of electrically conductive wires;
a compactable mineral insulation material surrounding free end portions of the wires;
temperature sensing means at the free end portions of the wires; and
a metal tube covering the mineral insulation material and the free end portions of the wires, the tube having an initial internal size to permit insertion over the mineral insulation material and being compressed to a smaller diameter thereby to compact the mineral insulation material tightly around the wires.
2. The device of claim 1 wherein the conductors are flexible conductors.
3. The device of claim 2 wherein the wires are covered by a flexible insulation material and the free end portions of the conductors are free of flexible insulation material.
4. The device of claim 3 wherein the mineral insulation material has parallel passages through which the free end portions of the wires are inserted prior to compressing the metal tube to a smaller diameter.
5. The device of claim 4 including a moisture barrier surrounding the wires between the mineral insulation material and the flexible insulation material.
6. The device of claim 5 wherein the metal tube is compressed into sealing engagement with the moisture barrier.
7. The device of claim 6 wherein the moisture barrier is Teflon.
8. The device of claim 3 wherein the flexible insulation material includes shielding.
9. The device of claim 8 wherein the shielding is woven stainless steel.

10. The device of claim 1 wherein the tube includes a closed end adjacent the temperature sensing means.

11. The device of claim 1 wherein the wires are of dissimilar metals and the temperature sensing means includes means for joining the outermost ends of the wires to each other.

12. The device of claim 1 wherein the temperature sensing means includes a resistance temperature detector.

13. The device of claim 1 wherein the temperature sensing means includes a thermistor.

14. The device of claim 1 wherein the compressible insulation mineral is magnesium oxide.

15. The device of claim 5 including strain relief means between the metal tube and flexible insulation material.

16. A method of manufacturing a temperature sensing device comprising the steps of

surrounding end portions of a pair of wires with a compactable mineral insulation material,

connecting the wire end portions with a temperature sensing means,

placing a metal tube over the mineral insulation material and the temperature sensing means, and reducing the diameter of the tube to compact the insulation material around the wire end portions.

17. The method of claim 16 wherein the tube has first and second opposite end portions and further including the step of partially closing the first end portion of the tube prior to placement over the mineral insulation material and temperature sensing means.

18. The method of claim 17 further including the step of providing a moisture seal around the wires at the second end portion of the tube to prevent entry of moisture into the interior of the tube through the second end portion of the tube.

19. The method of claim 18 wherein the moisture seal is made of Teflon.

20. The method of claim 18 wherein the wires are insulated and further including the steps of stripping the insulation from the end portions of the wires and placing the mineral insulating material around the end portion of each wire.

21. The method of claim 20 wherein the step of connecting the end portions of the wires with a temperature sensing means includes connecting the wires to each other.

22. The method of claim 20 wherein the step of connecting the end portions of the wires with a temperature sensing means includes connecting a thermistor between the wires.

23. The method of claim 20 wherein the step of connecting the end portions of the wires with a temperature sensing means includes connecting a resistance temperature detector between the wires.

24. The method of claim 18 wherein the step of reducing the diameter of the tube includes compressing the tube into sealing engagement with the moisture seal.

25. The method of claim 20 including the step of crimping an end portion of the tube prior to placing the tube over the mineral insulation material.

26. The method of claim 25 including using the crimped end portion of the tube to position the tube with respect to the mineral insulation material and the moisture seal.

27. The method of claim 18 further including the step of providing strain relief means between the wires and the second end portion of the tube.

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